



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,053	07/08/2003	Shalini Yajnik	33078/US/2	7518
38598	7590	08/29/2008		
ANDREWS KURTH LLP 1350 I STREET, N.W. SUITE 1100 WASHINGTON, DC 20005			EXAMINER CHAN, SAI MING	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 08/20/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/614,053

**Applicant(s)**

YAJNIK ET AL.

**Examiner**

Sai-Ming Chan

**Art Unit**

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 4/28/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/02)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating

obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1-7, 10, 12, 16 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fan et al. (U.S. Patent #6219706)**, in view of **Coates et al. (U.S. Patent # 7203731)**.

Consider **claim 1**, Fan et al. clearly disclose and show a method for routing and caching packets of data in a multicast network, comprising:

receiving a packet having a header section (col. 2, line 26-40 (header)) and a payload section (col. 2, line 26-40 (payload));

inspecting the payload section of the packet (col. 2, lines 28-35 (inspect packet payload)) for use in determining how to route the packet (fig. 1 (10 (router/firewall)), col. 2, lines 28-35 (identifying channels open for communication)) to subscribers (fig. 1(12), col. 4, lines 45-55 (external node))

selectively routing the packet based upon the inspecting (col. 8, lines 49-59 (access control)).

However, Fan does not specially disclose a locally caching data from the packet in a core routing node in the network core, wherein the core routing node is located

Art Unit: 2616

upstream from an edge routing node in a direction moving away from a subscriber machine.

In the same field of endeavor, Coates et al. clearly show a locally caching data from the packet in a core routing node in the network core (fig. 2 (130), fig. 17 (1710), column 21, lines 52-67, column 22, lines 1-2), wherein the core routing node is located upstream from an edge routing node (fig. 17 (1730), column 21, lines 52-66 (cdn is close to the edge)) in a direction moving away from a subscriber machine (fig. 17 (1740), col. 21, lines 36-51 (cdn server is away from the end-user (1740))).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a multicast network for routing and caching, as taught by Fan, and allow data to be locally cached, as taught by Coates et al. in order to improve the efficiency of data retrieval.

Consider **claim 2**, and **as applied to claim1 above**, Fan et al., as modified by Coates, clearly discloses and shows the method, further including performing the inspecting step (col. 2, lines 28-35 (inspect packet payload)) at a router (fig. 1 (10 (router/firewall))).

Consider **claim 3**, and **as applied to claim1 above**, Fan et al., as modified by Coates, clearly discloses and shows the method wherein the inspecting step

includes applying a filter to information in the payload section (col. 8, lines 49-59 (packet filter)).

Consider **claim 4**, and **as applied to claim 3 above**, Fan, as modified by Coates and Fan, clearly discloses and shows the method, further including propagating the filter (col. 7, lines 20-40 (SISs)) to a router in the network for use in performing the inspecting (col. 8, lines 49-59 (check access policy)).

Consider **claim 5**, and **as applied to claim 1 above**, Fan et al., as modified by Coates, clearly discloses and shows the method, further including programming a router (fig. 1 (10 (router/firewall))) in the network for performing the receiving, inspecting, and routing steps (fig. 4, col. 7, lines 20-40 (access control)).

Consider **claim 6**, and **as applied to claim 1 above**, Fan et al., as modified by Coates, clearly discloses and shows the method wherein the inspecting step includes inspecting attributes (fig. 4, col. 7, lines 20-40 (map to SIS)) for use in determining how to route the packet (col. 2, lines 28-35 (identifying channels open for communication)).

Consider **claim 7**, and **as applied to claim 1 above**,  
**claim 16**, and **as applied to claim 12 above**,

Fan et al, as modified by Coates, clearly disclose and show the method as described.

However, Fan et al., as modified by Coates, fail to show the time marking of the cached data.

In the same field of endeavor, Coates et al. clearly show the time marking (fig. 26 (2760),column 27, lines 19-34 (time-out parameter)) of the cached data.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a multicast network with routing and caching, as taught by Fan, and the marking of the cached data, as taught by Coates, so that data content sent to clients will always be up-to-date.

Consider **claim 10**, and **as applied to claim 1 above**,Fan et al., as modified by Coates, clearly discloses and shows the method as described.

However, Fan et al., as modified by Coates, fails to show that data is cached at the edge router.

In the same field of endeavor, Coates et al. clearly show the data is locally cached from the packet at an edge routing node (column 21, lines 20-27 (local cache at the edges)).

Therefore it would have been obvious to a person of ordinary skill in the art at the

time the invention was made to incorporate a multicast network with routing and caching, as taught by Fan et al., and show caching the data at the edge router, as taught by Coates, in order to enhance the data transmission efficiency.

Consider **claim 12**, Fan et al., clearly disclose and show the network, wherein the router inspects the payload (col. 2, lines 28-35 (inspect packet payload)) section of the packets in a network core for use in determining how to route the packets (fig. 1 (10 (router/firewall))), col. 2, lines 28-35 (identifying channels open for communication)) to subscribers (fig. 1(12), col. 4, lines 45-55 (external node)); and selectively routes the packets (fig. 1(12), col. 4, lines 45-55 (external node)) based upon the inspecting (col. 8, lines 49-59 (access control)).

However, Fan et al., do not specially disclose the edge and intelligent routers, cache manager and local caching of packet data.

In the same field of endeavor, Coates et al. clearly show edge routers (fig. 17 (1730)), intelligent routers (column 3, lines 3-18 (intelligent storage nodes)) and the network further comprise a core routing node (fig. 17(1710), column 21, lines 52-67, column 22, lines 1-2) located in the network core, and a cache manager (abstract (DOSMs)), which is operatively connected to the intelligent router (abstract (intelligent nodes)). The cache manager also includes instructions for:

locally caching data from the packet in a core routing node in the network core (fig. 2 (130), fig. 17 (1710), column 21, lines 52-67, column 22, lines 1-2), wherein the



core routing node is located upstream from an edge routing node (fig. 17 (1730), column 21, lines 52-66 (cdn is close to the edge)) in a direction moving away from a subscriber machine (fig. 17 (1740), lines 36-51 (cdn server is away from the end-user (1740))).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a multicast network for routing and caching, as taught by Fan, and allow data to be locally cached, as taught by Coates et al. in order to improve the efficiency of data retrieval.

Consider **claim 19**, Fan clearly discloses and shows an apparatus for routing and caching packets of data in a multicast network, the apparatus including a plurality of processors (fig. 2) and instructions (fig. 4) for: receiving a packet having a header section and a payload section (col. 2, line 26-40 (header and payload)); inspecting the payload section of the packet (col. 2, lines 28-35 (inspect packet payload)) in a network core for use in determining how to route the packet (fig. 1 (10 (router/firewall)), col. 2, lines 28-35 (identifying channels open for communication)) to subscribers (fig. 1(12), col. 4, lines 45-55 (external node)); selectively routing the packet based upon the inspecting (col. 8, lines 49-59 (access control)).

However, Fan et al. do not specially disclose a locally caching data from the packet in the network core.

In the same field of endeavor, Coates et al. clearly show a locally caching data from the packet in a core routing node in the network core (fig. 1 (130), fig. 17 (1710), column 21, lines 52-67, column 22, lines 1-2), wherein the core routing node is located upstream from an edge routing node (fig. 17 (1730), column 21, lines 52-66 (cdn is close to the edge)) in a direction moving away from a subscriber machine (fig. 17 (1740)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a multicast network for routing and caching, as taught by Fan, and to cache data in a local server, as taught by Coates et al., so that the efficiency of data retrieval will be greatly enhanced.

**Claims 8-9 and 17-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fan et al. (U.S. Patent #6219706)**, in view of **Coates et al. (U.S. Patent#7203731)**, and in view of **Lango (U.S. Patent # 6813690)**.

Consider **claim 8**, and **as applied to claim 1 above**,

**claim 17, and as applied to claim 12 above,**

Fan et al., as modified by Coates, clearly discloses and shows the method as described.

However, Fan, as modified by Coates, fail to show the indexing of the cached data.

In the same field of endeavor, Lango et al. clearly show the indexing (column 18, lines 58-64; fig. 5) of the cached data.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a multicast network with routing and caching, as taught by Fan, and show the cached data is indexed, as taught by Lango, in order to enhance data retrieval.

Consider **claim 9, and as applied to claim 1 above,**

**claim 18, and as applied to claim 12 above,**

Fan et al., as modified by Coates, clearly discloses and shows the method as described.

However, Fan et al., as modified by Coates et al., fail to show that the server receives a request for data and determines if the cached data is the requestor wants.

In the same field of endeavor, Lango et al. clearly show the server receives a request for data (column 3, lines 32-34); and determines whether the cached data satisfies (column 3, lines 34-51) the request.

Therefore it would have been obvious to a person of ordinary skill in the art at the

time the invention was made to incorporate a multicast network with routing and caching, as taught by Fan, as modified by Coates et al., and provide the ability to handle request and verify the cached data before transmission, as taught by Lango, in order to guarantee the accuracy of data content sent.

**Claims 11, 15 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fan et al. (U.S. Patent #6219706)**, in view of **Coates et al. (U.S. Patent #7203731)**, and further in view of **Lewin (U.S. Patent #7010578)**.

Consider **claim 11**, and **as applied to claim 1 above**, Fan et al., as modified by Coates, clearly discloses and shows the method as described.

However, Fan et al., as modified by Coates, fail to show that expired cached data will be removed or refreshed.

In the same field of endeavor, Lewin et al. clearly show the cached data after the expiration (column 4, lines 61-62) of a time frame T will be removed.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a multicast network with routing and

caching, as taught by Fan, and remove expired cached data, as taught by Lewin et al., in order to guarantee that the data content is always up-to-date.

Consider **claim 15**, and **as applied to claim 12 above**, Fan et al., as modified By Coates, clearly discloses and shows the network as described.

However, Fan et al., as modified by Coates et al., fails to show the channel manager and the channels.

In the same field of endeavor, Lewin et al. clearly a plurality of channel manager (fig. 3 (NOC)) that provide properties for a plurality of channels (fig. 2 (links between 202 and edge server #2; links between 202 and client's servers; links between 202 and computer).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a multicast network for routing and caching, as taught by Fan, and a channel linkage, as taught by Lewin et al. so that the load and distribution of resources are enhanced.

Consider **claim 20**, and **as applied to claim 19 above**, Fan, as modified by Lewin et al., clearly discloses and shows the method as described.

However, Fan et al., as modified by Coates, fails to show the two processors; one caches the data locally and the other perform inspecting and route selection.

In the same field of endeavor, Lewin et al. clearly discloses and shows the apparatus, wherein the plurality of processors (fig. 1(102a and 102b)) include a first processor (fig. 2 (202)) and a second processor (fig. 2 (Edge server #2)), wherein the first processor executes the inspecting and selectively routing instructions (fig.2 (Edge server #2)) and the second processor executes the locally caching instruction (fig. 2 (steps 3 and 4)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a multicast network for routing and caching, as taught by Fan, and processors that cache data, inspect request and perform route selection, as taught by Lewin et al., so that the efficiency of data transmission will be greatly improved.

**Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Fan (U.S. Patent Publication # 20060233155)**, in view of **Coates et al. (U.S. Patent #7203731)**, and in view of **Lewin (U.S. Patent #7010578)**, and further in view of **Lango (U.S. Patent # 6813690)**.

Consider **claim 13**, and **as applied to claim 12 above**, Fan, as modified by

Coates et al., clearly discloses and shows the network as described.

However, Fan et al., as modified by Coates, fail to show the agent and the edge servers.

In the same field of endeavor, Lewin et al. clearly show an agent (fig. 3 (mapping agent)), operatively connected to the edge routing node (fig. 3 (edge servers), as described.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a multicast network with routing and caching, as taught by Fan, and an agent connected to the edge server, as taught by Lewin et al. so that incoming data or messages are mapped to the corresponding router.

However, Fan et al., as modified by Coates and Lewin, fails to show how the cached data is located, retrieved and processed.

In the same field of endeavor, Lango et al. clearly show the instructions for: determining (column 3, lines 22-32) location of cached data; retrieving cached data (column 3, lines 32-51) from the local cache; and processing retrieved cache data (column 3, lines 32-51).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to show a multicast network with routing and caching, as taught by Fan, having an agent for the edge server, as taught by Lewin, and to locate and retrieve cached data, as taught by Lango, so that data content can be sent efficiently.

***Response to Amendment***

Applicant's arguments filed on April 28, 2008, with respect to claims 1, 12 and 19, on pages 5-8 of the remarks, have been carefully considered.

In the present application, Applicants basically argue, that Fan et al. do not teach or suggest "inspecting the payload section of the packet for the use in determining how to route the packet to subscriber". The Examiner has modified the response with a new reference which provides "inspecting the payload section of the packet for the use in determining how to route the packet to subscriber". See the above rejections of claims 1, 12 and 19, for the relevant interpretation and citations found in Fan et al., disclosing the limitations.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Qu: U.S. Patent # 6854063, Issued: Feb 8, 2005

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents  
P.O. Box 1450



Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Sai-Ming Chan whose telephone number is (571) 270-1769. The Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

/Sai-Ming Chan/

Examiner, Art Unit 2616

August 14, 2008

/CHAU T. NGUYEN/

Supervisory Patent Examiner, Art Unit 2619